NEWSLINE

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Laboratory's supercomputer is tops

By Don Johnston
NEWSLINE STAFF WRITER

The Laboratory is home to the world's first and fifth most powerful supercomputers on the new Top500 list, announced Monday at the Supercomputing 2004 conference in Pittsburgh.

BlueGene/L topped the list with the record breaking performance of 70.72 teraflops, or trillion floating operations per second, first announced by Energy Secretary Spencer Abraham Nov. 4. The machine's performance was measured using the industry-standard LINPACK benchmark. BlueGene/L was developed by IBM in collaboration with Laboratory researchers who will use the system.

The Lab's "Thunder" Linux cluster was ranked No. 5.

"Achieving the BlueGene/L system has

See **TOP 500,** *page 7*

BOB HIRSCHFELD/NEWSLINE

From left, Mike McCoy and Dona Crawford of LLNL and Dimitri Kusnezov, NNSA ASC program director, stand in front of a small scale model of BlueGene/L.

Lab engineer's model glider soars into aviation history at new Smithsonian museum

By Anne M. Stark
NEWSLINE STAFF WRITER

When Chris Silva was introduced to radio-controlled sailplanes in the late '90s, he never imagined that one he and his father would build would wind up in the Smithsonian Air and Space Museum.

But sure enough, his one-fifth-scale model of a futuristic sailplane earned the mark.

As a graduate student at UCLA, Silva, who now works in the Lab's Defense Technologies Engineering Division, entered the American Institute of Aeronautics and Astronautics flying competition in which students formed teams to build and compete electric-powered airplanes or sailplanes. The team to complete the most number of laps wins.

Around this time, Silva and a friend came across an article in a 1981 issue of *Soaring* in which John McMasters, a technical fellow at Boeing, described a futuristic sailplane equipped with many technological advancements including computer-assisted pilot control. At the time, McMasters said a sailplane of this nature could be built and flown by the year 2001.

"In a sense he was poking fun at how complicated and high-tech sailplanes had become," Silva said.

That didn't stop Silva from trying. In 2000, he and his father got to work building a one-fifth-scale model of

See **SAILPLANE,** *page 8*

Homeland Security seeks ways to build, strengthen partnerships

By Stephen Wampler
NEWSLINE STAFF WRITER

DAVIS — Integrating new technologies into federal security agencies that are working round-the-clock is a difficult challenge, a top Department of Homeland Security (DHS) scientist stated last week.

Michael Carter, chief scientist for plans, programs and budget in the department's Science and Technology directorate, brought this view to about 130 UC Davis and LLNL researchers who attended a homeland security workshop.

Formerly the associate division leader for Proliferation Detection Systems at LLNL, Carter has been working on assignment in Washington D.C. for DHS for the past two years.

The Nov. 4 meeting, sponsored by the Laboratory's University Relations Program and the UC Davis Office of Research, was designed to foster partnerships in homeland security. The event was held at the UC Davis University Club and was the culmination of a six-month LLNL-UC Davis seminar series on homeland security.

"How do we do an operational exercise with Cus-

See **CARTER,** *page 8*

Lawrence Award ceremony

Energy Secretary Spencer Abraham presented Claire Max with her E.O Lawrence Award for oustanding contributions in physics during a special ceremony Monday in Washington D.C. Max, one of seven Lawrence Award winners this year, was singled out for her contributions to laser guide star adaptive optics. The awards originally were anounced in September.

Tripodes gets state position

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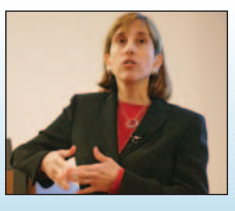
HOME moves closer to goal

— Page 3



Calories vs. cancer

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LAB COMMUNITY NEWS

Weekly Calendar

Technical Meeting Calendar, page 4

Friday **12**

Today is "**Take a Model Train to Work Day**," marking the beginning of the model railroading community's busiest season. A garden railroad model train display along with various railroad items by Matthew and Carolyn Coelho will be set up in the main lobby of Bldg. 551W from 10 a.m. to 2:30 p.m. You also can go to Bldg. 517, room 1141, where Bruce Jahn will have a model train display. To learn more about Take a Model Train to Work Day or model trains, visit the Website at http://www.greatesthobby.com.

• • •

Brighter Holidays has a list of more than 100 families ready to be sponsored. Contact retiree, Betty Klino, at 443-0642 or nklino@hotmail.com to receive a family you would like to help. Bicycle donations also are being accepted — many children ask for their first bike through this program and some adults use bikes to get to and from work. If you have "repairable" bikes that you would like to donate, you can contact Xavier Cabrales, 2-7448. Tell him these are for Brighter Holidays and he will set up arrangements for the drop off of the bikes. Anyone requesting bicycles for their family must contact Cabrales. Members of the LLNL Cycletrons Club have volunteered to repair bikes on their free time for this worthy cause. For further information or questions, contact Klino or Karen Rosenberg, 2-8551.

• • •

Two actors from the **Ashland Oregon Shakespeare Festival** will present evening performances at the Unitarian Universalist Church in Livermore, 1893 N. Vasco Road today and Saturday at 8 p.m. They will perform selections from Shakespeare, plus works from classic and contemporary literature. The Oregon Shakespeare Festival players have made Livermore a stop on their winter tours for many years. This year's performers from the Ashland repertory group are Kalafatic Poole and Aisha Kabia. Ticket prices are $18 ($15 for students) if purchased in advance. All tickets are $20 at the door. For information, contact Judith or Monty Herr by e-mail at m.herr@comcast.net or by phone at 292-1519.

UP & COMING

Looking for an interesting activity for friends and family who are visiting during the holidays? Want them to learn more about where you work? Why not sign them up for a tour of the Laboratory? The Public Affairs Office provides **community tours** for those 18 years and older on Tuesday and Thursday mornings, with stops at some of the Lab's key programs. There are a limited number of openings and advanced registration is required. For more information,call 4-6575.

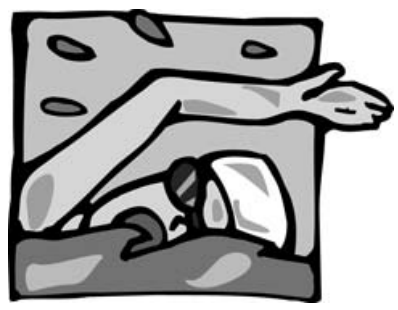
• • •

Site 300 will be closed for the Thanksgiving holiday on Nov. 24-26.

RETIREES' CORNER

Tom Crites (Hazards Control, 2004) recently completed an Ironman Triathlon at Madison, Wis. and would encourage other retirees that life isn't over at 60/62/65 whatever. It wasn't a particularly good finish time but it was a thrill and he will probably do another one.

The swim was more fun than a litter of puppies. Ironman insists on mass starts. With 2,100 people all starting at the same time on a double-loop course around a set of buoys, it was full-body contact all the time. He had hoped to draft other swimmers; that certainly worked out, but he still had the slowest time he'd ever had for that distance.



The bike event was hills, lots of rolling hills, lots of turns and hot. No hills as steep or long as Del Valle, but several to bring you out of the saddle and no place to settle into a steady ride. At the first of the week, they had predicted a high of 62, so he said "oh goodie" and got out the arm warmers. Midweek they said 75, he said "fine" and put the arm warmers away. Race day it was in the upper 80s, 90 at one point. They had Gatorade at the rest stops and his stomach doesn't tolerate that well, so he had mixed up his own stuff to pick up at mid-point. Unfortunately, in the heat, it went bad and tasted like cheap, stale beer. It was another 12 miles before he could switch to Gatorade and he got behind on drinking again. Having learned on the Deathride how much rest stops can eat up time, he was off the bike 3.5 minutes for this ride and felt pretty good going into transition. No crashes, no flats, no cramps, a perfect ride.

The run was the longest marathon of his life. The run course is a dream, basically flat, with cheering crowds. Some slopes in town and one small hill. But four miles in he started getting light-headed and dizzy, at eight miles started cramping up, and at 10 miles throwing up. But he figured out that, with the time remaining, he could walk in and found sucking on ice relieved the nausea, so he made it in with the worst marathon time he'd ever had.

He lost 10 pounds during the event, but recovered that in a couple days. The next morning he had decided he'd never do another event more than eight hours, but by now he's ready to sign up for another Ironman. (irahm@pacbell.net)

Ron and **Barbara Hill** (Mechanical Engineering 1991, and 1993) had a mini-reunion at their second home above Jackson. They invited **Jane** (Engineering, 1993) and **Pat Ellis** (Hazards Control & G Division, 1991), **Ron Carr** (Mechanical Engineering, 1993) and his wife, **Donna** (Electronics Engineering, 1993) and **Jane Olson** (Mechanical Engineering, 1993), and **Cleve Gunderson** (Mechanical Engineering, 1983) and his wife, **Betty.** It was a very lovely afternoon with good food and drink and much reminiscing about our previous lives at the Laboratory. It also was fun catching up on what everyone has been doing since they left the Laboratory.

Please send any input to Jane or Gus Olson. E-Mail: AugustO@aol.com or JaneRubert@aol.com; phone: (925) 443-4349, or snail mail address: 493 Joyce St., Livermore, CA 94550.

CASIS workshop to focus on imaging sci-

Engineering's Center for Advanced Signal and Imaging Sciences (CASIS) will sponsor its two-day conference "Signal and Imaging Sciences Workshop" on Nov. 18-19.

Two guest keynote speakers will present at the workshop — Jim McClellan of Georgia Tech and Alan Oppenheim of MIT.

McClellan will present "Array Signal Processing for Locating Buried Objects and Tracking Moving Targets." McClellan, a Byers professor in digital signal processing, will review recent work at Georgia Tech for two applications that involve array processing and advanced signal processing: tracking multiple maneuvering vehicles and locating buried land mines in clutter. In both problems, there is a desire to use multiple sensor types (acoustic, radar, video, infrared, metal detection, etc.) and perform coordinated signal processing that exploits the strengths of each sensor. Some results will be shown to indicate progress along this line. In a distributed micro-sensor network, additional sensors would increase power consumption, so the problem of fusing multi-modal sensor data must be done under a power-performance trade-off.

Oppenheim, a Ford professor of electrical engineering, will present, "Things My Mother Never Told Me (About Signal Processing)." There are many styles of conducting research both at an academic institution and in industry. During this talk, Oppenheim will share some personal thoughts that have been important to him in his research and teaching career, which he tries to convey to his students when doing creative research. One of his favorites is "when in doubt, go skiing." Oppenheim also will discuss some of the current projects under way in the Digital Signal Processing Group (DSPG) at MIT and how they were chosen

Sessions begin at 9 a.m. in the Bldg. 123 auditorium. There is no cost to register, attend or give a presentation.

For technical questions contact Steve Azevedo, 2-8538, and to register, contact Dora Da Rosa, darosa2@llnl.gov, or 2-4797.

Newsline

Newsline is published weekly by the Internal Communications Department, Public Affairs Office, Lawrence Livermore National Laboratory (LLNL), for Laboratory employees and retirees.

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Website: http://www.llnl.gov/PAO/

Construction to enhance site security will close Lab roads, walkways

Over the next two months, there will be heavy construction work in direct support of enhanced site security around buildings, parking lots, pedestrian pathways and roadways.

Personnel should expect road closures, loss of available parking and some altered traffic patterns. Employees should allow extra time to conduct day-to-day onsite activities.

The Laboratory Fire Department and Protective Force Division have been informed of these response challenges and will use alternative response routes as needed to maintain service capabilities.

For more information, employees should contact their program security representative.

Tripodes gets state appointment

Jim Tripodes

Jim Tripodes, a scientist in the Price-Anderson Amendments Act Office, has been appointed to the Southwestern Low-Level Radioactive Waste Commission. Gov. Arnold Schwarzenegger announced the appointment in October.

The commission is an interstate agency responsible for assuring the availability of disposal capacity for commercially generated low-level radioactive waste in the states of Arizona, California, North and South Dakota.

Tripodes came to the Lab in 2002, serving as deputy department head of Environmental Protection. He joined the Price-Anderson Amendments Act Office in July 2003, evaluating potential noncompliance with the Department of Energy's nuclear safety rules to determine their reportability to headquarters. The office also serves as the Lab's liaison with the Defense Nuclear Facilities Safety Board.

Prior to joining the Lab, Tripodes spent 23 years at UC Irvine, working in health physics and environmental protection technical and managerial roles.

HOME Campaign surpasses the halfway point to 2004 goal

Employees have donated more than $882,000 in the HOME Campaign to help reach the 2004 goal of $1.6 million.

The first incentive drawing will be today (Nov. 12), for packets submitted last Friday. Prizes include a Friday or Saturday night stay with breakfast for two at a Wyndam Hotel, tickets to the San Francisco 49ers, San Jose Sharks, Oakland A's or San Francisco Giants games, as well as gift certificates to local restaurants. The earlier you donate, the more chances you have to win a prize

If employees donate electronically, they are instantly entered in all future incentive drawings. There is no need to return an envelope.

Employees who do not donate electronically may give packets to their HOME representative who will deliver it unopened to the Pledge Processing Center in the Bldg. 151 lobby, where it will be processed.

Envelopes will be accepted through Dec. 10 for inclusion in the HOME Incentive Program. Envelopes must be dropped off at the Pledge Processing Center by noon each Friday to be eligible for the drawing on the following Friday. Winners will be randomly selected from among those pledging that week and from those pledges received earlier but who have not won a prize.

Today is the last day to make one-time HOME Campaign donations for 2004 tax year and must be made online. All other donations — monthly payroll deductions or one-time donations using the pledge form in the HOME booklet — made between now and the end of the Helping Others More Effectively Campaign will be processed for 2005. For questions about the donation process, call 3-HOME.

One-time payroll deduction donations made for the 2004 campaign will be taken out of the Dec. 1 paycheck for monthly paid employees and the Dec. 10 paycheck for bi-weekly paid employees.

One-time and monthly payroll donations for 2005, made online or using the pledge form from the HOME booklet, will be available throughout the HOME Campaign. One-time payroll deductions for 2005 will be taken out of the Jan. 1 paycheck for monthly-paid employees and the Jan. 7 paycheck for those bi-weekly paid employees.

For more information on the HOME Campaign and incentives, go to http://www-r.llnl.gov/home2004/index.html.

HOME directorate participation statistics

Directorate	Total employees	No. of contributions	Amount donated	Percent participation
Director's Office	151	84	55,544	56
Administration & Human Resources	335	163	58,664	49
Biology & Biotechnology Research	218	53	17,089	24
Chemistry & Materials Science	489	154	79,469	31
Chief Financial Officer	104	65	17,809	63
Computation	1,037	265	124,504	26
Defense & Nuclear Technologies	363	93	44,746	26
Energy & Environment	294	78	32,476	27
Engineering	2,051	398	197,570	19
Laboratory Services	1,233	230	67,327	19
National Ignition Facility (NIF) Programs	198	46	18,730	23
Nonproliferation, Arms Control & International Security	232	49	22,375	21
Physics & Advanced Technologies	349	113	45,425	32
Safeguards & Security	371	39	10,281	11
Safety & Environmental Protection	745	205	78,725	28
S/L Vendor	—	—	10,757	—
Others	7	7	665	100
Totals as of Nov. 11	8,177	2,042	882,157	25
Goal for the 2004 HOME Campaign			$1.6 million	

NEWS YOU CAN USE

Laboratory employee Jerry Lin is named a fellow of ASME

Jerry Lin of the Defense Technologies Engineering Division has been named a fellow of the American Society of Mechanical Engineers (ASME). The fellow grade is the highest elected grade of membership within ASME, and recognizes exceptional engineering achievements and contributions to the engineering profession.

Lin was recognized for his pioneering work in computational mechanics, including contact algorithms, mixed time integration, element eigenvalue theorems, and element technologies that have been adopted by many finite element codes. He is a devoted advocate of finite element methods. As the administrator of LLNL's collaborator program and chief liaison to the Department of Energy's Energy Science & Technology Software Center, Lin works to make sure that the Laboratory's finite element suites are available to institutions worldwide.

Only approximately 2,500 out of more than 100,000 ASME members have been elevated to the grade of fellow.

Lin earned his bachelor's degree in civil engineering from National Taiwan University in 1978, his master's and Ph.D. in civil engineering from Northwestern University in 1981 and 1985, respectively.

Jerry Lin

He has worked at the Laboratory since January 1995 as a research engineer and lead code developer. Lin previously worked at KBS2 Inc. of Illinois and the General Motors Corporation.

Technical Meeting Calendar

Friday 12

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH
"Behavior Recognition via Spatio-Temporal Features," by Serge Belongie, UC San Diego. 10 a.m., Bldg. 451, room 1025 (property protection area). For more information, go to http://www.llnl.gov/casc/calendar.shtml. Contact: Shawn Newsam, (ISCR) 2-7392, or Leslie Bills, 3-8927.

Monday 15

N-DIVISION SEMINAR
"Lattice Gauge Theory and the BlueGene/L Supercomputer," by Pavlos Vranas. 10:30 a.m., Trailer 2128, ballroom. Contact: Ron Soltz, 3-2647, or Annette Cook, 2-7856.

Tuesday 16

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH
"Information Extraction from Unstructured Text," by Andrew McCallum, University of Massachusetts, Amherst. 1 p.m., Trailer 3427, room 1220 - Onyx Room (property protection area). For more information, go to http://www.llnl.gov/casc/calendar.shtml. Contact: Tina Eliassi-Rad, (CASC) 2-1552, or Leslie Bills, 3-8927.

RADIATION DETECTION CENTER
"Source Search Results for a Large Area Imager," by Klaus Ziock, 11 a.m., Bldg. 132S, room 1755 (BKC Conference Room - uncleared area). Contact: Ron Wurtz, 3-8504, or Christie Shannon, 3-6683.

Wednesday 17

ELECTRONICS ENGINEERING TECHNOLOGIES
"Improving Automatic Speech Recognition by Learning Long-Term, Narrow-Frequency Information in Speech," by Barry Chen. 10-11 a.m., Bldg. 141, room 1104, Nyquist Room. P-cleared. Contact: Becka Gordon, 2-2199.

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH
"Runtime and Compiler Support for Large Scale Data Driven Science," by Umit Catalyurek, Ohio State University. 2:30 p.m., Bldg. 451, room 1025 (property protection area). For more information, go to http://www.llnl.gov/casc/calendar.shtml. Contact: Edmond Chow, (CASC) 3-1915, or Leslie Bills, 3-8927.

INTEGRATED COMPUTING & COMMUNICATIONS DEPARTMENT/MACINTOSH TECHNICAL SEMINAR SERIES
This session will feature a presentation on Redstone Software's "Eggplant" by LLNL computer support associate Bruce Anderson. Eggplant is a Mac-based automated testing application that tests software against Windows, Linux, Solaris, HP UX, as well as other Macs via a Virtual Network Computer connection. 10:30 a.m., Bldg. 543 auditorium. Contact Duane Straub, 2-9774, or straub1@llnl.gov.

Thursday 18

ENGINEERING/THE CENTER FOR ADVANCED SIGNAL AND IMAGING SCIENCES (C.A.S.I.S.)
The "Signal and Imaging Sciences Workshop" will be held on Nov. 18-19. Two keynote speakers will present - Alan Oppenheim of MIT and Jim McClellan of Georgia Tech. Both are among the world's experts in signal processing, and they will share their work and insights with the group. Sessions will begin at 9 a.m. and will be held in the Bldg. 123 auditorium. There is no cost to attend the workshop. To register, attend or give a presentation, contact Dora Da Rosa , darosa2@llnl.gov, or 2-4797.

BIOSECURITY & NANOSCIENCES LABORATORY
"Mechanisms of Protein Self-assembly: The Role of Metastable Phases," by postdoc interviewee Olga Gliko, University of Houston. 2 p.m., Bldg. 155 auditorium. All attendees need to be badged. Contact: Alex Malkin, (949) 824-4397, or Josie Morgado, 2-7181.

ELECTRONICS ENGINEERING TECHNOLOGIES DIVISION
"Exploring Goodness of Fit and Spatial Correlation Using Components of Tango's Index of Spatial Clustering," by Monica Jackson. 10-11 a.m., Bldg. 141, room 1104 - Nyquist Room. P-cleared. Contact: Becka Gordon, 2-2199.

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH
"Discretization Techniques for Coupled Flow and Transport," by Clint Dawson, University of Texas, Austin. 10 a.m., Bldg. 451, room 1025 (property protection area). For more information, go to http://www.llnl.gov/casc/calendar.shtml. Contact: Carol Woodward, (CASC) 4-6013, or Leslie Bills, 3-8927.

Friday 19

ELECTRONICS ENGINEERING TECHNOLOGIES
"A Primer on Modeling Spatial Point Patterns via Bayesian Methodology," by Matt Bognar. 10-11 a.m., Bldg. 141, room 1104 - Nyquist Room. P-cleared. Contact: Becka Gordon, 2-2199.

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH
"Harmonic Functions for Quadrilateral Remeshing of Arbitrary Manifolds," by Michael Garland, University of Illinois, Urbana-Champaign. 10 a.m., Bldg. 451, room 1025 (property protection area). For more information, go to http://www.llnl.gov/casc/calendar.shtml. Contact: Mark Duchaineau, (CASC) 3-1320, or Leslie Bills, 3-8927.

PHYSICS & ADVANCED TECHNOLOGIES/N DIVISION
"Heavy Ion Physics with the CMS Detector at the LHC," by Bolek Wyslouch, Massachusetts Institute of Technology. 10:30 a.m., Trailer 2128, ballroom. Contact: Jennifer Klay, 2-4058, or Annette Cook, 2-7856.

The deadline for the next Technical Meeting Calendar is noon, Wednesday.

Send your input to tmc-submit@llnl.gov. For information on electronic mail or the newsgroup llnl.meeting, contact the registrar at registrar@llnl.gov.

Size matters when it comes to preventing cancer

By Linda Lucchetti
NEWSLINE STAFF WRITER

The weighty topic of obesity and its link to cancer and other diseases was highlighted this week in "Lifestyle and Cancer: An Overview of Current Knowledge," a talk presented by Eugenia E. Calle, Ph.D., national director of analytic epidemiology for the American Cancer Society .

Calle visited Pleasanton's Valley Care Medical Center on Monday and spent much of Tuesday meeting with various Laboratory groups to discuss both research ideas and strategic initiatives to address obesity. She provided her talk to Lab employees during the lunch hour. Her presentation was sponsored by the Lab's Worklife Programs Office, Health Services Department and the Public Affairs Office.

"You'd have to have been living under a rock not to know that obesity has become a hot topic," Calle began, noting millions of "hits" on the Internet and more than 600 articles published on the matter this year alone. Along with increased pounds, there's been increased media coverage and many more bariatric surgeries performed since the late 1990s.

Obesity has become an epidemic in the United States, with incidences in adults doubling during the past 25 years. Particularly disturbing is that there are similar trends in children and teens. Although a global problem, the United States ranks as the poster child for obesity, Calle said.

JACQUELINE MCBRIDE/NEWSLINE

Eugenia E. Calle

Lifestyle and environment make it challenging in today's world to maintain a healthy weight. Calle said that calories are plentiful and cheap; physical activity has become voluntary; and basically, it's easier, cheaper, and more fun to ignore weight gain.

Calle's research looks at how obesity, more often the result of diet and inactivity, can be a risk factor in many types of cancers in men and women. In particular, broader research areas include breast cancer risk factors, hormone-replacement therapy, adiposity and cancer incidence and mortality.

A relatively new field, research on obesity and cancer is actively analyzing the specific mechanisms linking the two. For example, scientists suspect that postmenopausal women who are obese are at greater risk for breast cancer, attributing an increase in free estrogen. In men, there appears to be stronger association of abdominal obesity — storage of fat under the muscles and around internal organs, which may increase the risk of colon cancer.

Calle stated that obesity is associated with more cancer sites than previously recognized and that in the future, other cancers currently not as high on the list — gallbladder, pancreas, and liver — could be considered obesity-related.

There is strong evidence that obesity causes many types of cancer, diabetes, coronary heart disease, stroke, fatty liver disease, osteoarthritis and lower quality of life. Calle said today's obesity problem is the tobacco smoking problem of the 1950s with two common themes: the problem is obvious, the solutions are not.

Volutneer Bureau lets employees reach out to help their community

By Linda Lucchetti
NEWSLINE STAFF WRITER

"If you want to lift yourself up, lift up someone else," Booker T. Washington once said. What a great quote to describe what you receive when you give and help others.

Many Lab employees consider volunteering an important part of their lives, whether it be assisting neighbors, working on church activities, or donating their time in a variety of ways that serve those in need.

Maybe you've thought about taking a more active role in volunteering. Do you have interests that would benefit others? Cooking? Organizing? Caring for the elderly? If you would like to put your talents to use, and make a difference in the lives of others, consider being part of the Lab's Volunteer Bureau, established to effectively coordinate the many requests the Lab's Public Affairs Office receives from local groups and agencies. The bureau, whose catch phrase is "Choose to Volunteer," distributes requests through a controlled e-mail list that employees can join.

Nadine Horner of Public Affairs manages the bureau and encourages employees to take part.

"The beauty of the Volunteer Bureau is that you receive notice of community requests and you can choose where you want to donate your time. Through our e-mail communications, you learn about these wonderful opportunities and then you work directly with the organization with what works best for your schedule," Horner said.

Why volunteer? Just ask Lab employees Joanna Stadler and Lynn Groves.

Stadler, who helps organize the Lab's "Brighter Holidays" program explains, "Volunteerism is the fabric of a caring society. It's giving your time and effort to help others without expectation of monetary gain but just to see the smiling and happy faces, and crying faces, when they realize there are others who care about them. These are my reasons."

Groves coordinates the annual "Toys for Families" holiday drive. She states that she does volunteer work for the joy of it. "It's the best, longest lasting feeling you can have, to give a child a gift they didn't dare hope for, and to see the look of relief in their parent's eyes."

If you are interested in finding out more about the Volunteer Bureau or to add your name to the list to receive notices, go to the Web at http://www-r.llnl.gov/pao/community_relations/ volunteer_bureau.html.

Native American Heritage celebrated through song, dance, film

November is Native American Indian Heritage Month. LLNL's American Indian Activity Group and the Worklife Program's Office invite employees to celebrate Native American Indian Heritage Month with the following activities:

• Nov. 16 — Steve Grey,director of Indian Affairs, DOE, will present "American Indian 101" from noon to 1 p.m. in Bldg., 482, room 1103 (NIF) auditorium.

• Nov. 17 — The American Indian Month Celebration will include native songs and dance by the Four Winds Dance Group featuring LLNL PSO Tony Fuentes and eagle/hoop dancing. Buffalo burgers, chips and sodas also will be on sale for $6. The celebration runs from 11:30 a.m. to 1 p.m. at the LLNL picnic area.

• Nov. 30 — "Native American Mascot Controversy," by Amber Machamer from noon-1 p.m., in the Bldg. 361 auditorium.

In addition, the American Indian Activity Group will host a brown bag lunch/movie hour on set days from noon to 1 p.m., in Bldg. 571, room 2301.

• Today (Nov. 12) — "500 Nations," PBS documentary, episode 7 "Raids Across the Plains Struggle for the West."

• Nov. 19 — "Navajo Code Talkers," documentary detailing the life of the Navajo code talkers whose skills played a vital role in World War II.

• Nov. 23 — "Navajo Code Talkers," documentary detailing the life of the Navajo code talkers whose skills played a vital role in World War II from noon-1 p.m., Trailer 5475, room 1145.

For more information, contact the Worklife Programs Office, 2-9543.

Classified ads

See complete classified ad listings at https://www-ais.llnl.gov/newsline/ads/

Automobiles

1945 - Willys MB.I am no longer able to work on this frame up restoration project.I have pics if you want to see.$3K 209-833-7149

1991 - Toyota 4Runner SR5 V6 4WD, 98K, Auto, A/C, Pwr W/L/M, Tuned/Smogged, $5200/BO 209-537-0229

1991 - Mazda 929S. Drk blue, A/C, Pwr windows/locks/steering, dual power seats, sunroof, abs, leather, runs good. $2200 b/o. 530-574-2247

1999 - Red, Mitsubishi Eclipse GS Spyder - Convertible, leather intr., AM/FM Stereo, Premium wheels, New tires, Great condition, $9,000.00. 209-835-8346

2002 - Chevy Tahoe with 33,000 miles, black with grey leader seats for 7 people, 4X4 with sun roof, fully loaded with all the extras. Asking 24,800.00 209-845-9077

1998 - Red 4D Chevy Cavalier. Runs and looks great. 3,000.00 88,500 miles Avail after 12/15/04. 209-835-9673

1998 - Toyota SiennaLE 79000miles, dark green, dual sliding doors, quad seat, roof rack, run boards, tow pkg, power win&door locks, keyless entry, cd, $9400 925-449-8304

1999 - Chevy Tahoe LS. 4 in lift. Excel cond. New BGF tires. 78K miles. $15,000 obo. 925-240-7053

1998 - Nissan Pathfinder 4X4 great cond new timing belt & clutch 112k miles at lab during day $7800 obo 408-712-1730

2005 - Ford Focus Zx4Se Perfect Condition.2700 miles. Metalic Grey, 6 disc cd,all power, abs brakes,Automatic. $19,500. 510-432-7524

1997 - Beautiful T-Bird, low, low miles,excellent condition, well maintained. Has extended Ford warranty. Call for details. 510-537-7222

2000 - Dodge Neon ES 4dr,5 Speed, Power windows, locks, cruise control, alloy wheels, Cd player 134,000mi, $3500obo. 831-234-0481

1997 - Jeep Grand Cherokee Laredo. 130K. Runs well. Looks good. New stereo/amp/ speakers. $5000 OBO. Great for a starter car! Reg. good til Aug 05. 510-351-4575

1964 - Chevy Corvair Monza 4Dr., 76K mi., new tires and exhaust, new gaskets for oil, trans, and axle. $1500 OBO. 209-740-7287

1996 - Saab 900SE Turbo,black,loaded,sun roof,6 disc CD,lthr,ski/bike rack,recent overhaul,great condition for 98K miles,$6.9K 925-249-1640

Automobile Accessories

Stock rims for a chevy truck, 6 lug pattern! $50 (925)525-8738 209-848-1138

Ford truck rims: 4 ea. 6x16 8 lug off of 1990 F250. These are stock steel wheels. 40.00 209-836-1062

Tires For Sale~ Brand new with stickers, 17inch. low profile! $400 O.B.O.(925)525-8738 209-848-1138

Bicycles

1960s cruiser collection. Boys 26in. Sonic Flyer $125, Ladies 26in. Schwinn $125, & girls 20 in. Schwinn Hollywood $65. Can email pics. 925-455-6785

Boats

35 HP electric start outboard with gas can. I do not need it. $300 OBO. 925-766-8233

1987, 21ft Bayliner Capri, Model 2150 Bowrider, Good Condition, Low hours on new engine, $6000, evening calls only 209-825-8130

18 ft. wooden boat. 85 hp Evinrude w/9.0 hp.aux.engine. Runs good. Great for fishing.$1500/BO 925-447-6301

Cameras

Sony DSC P-5 3.2 MP digital camera on sale for $150. Hardly ever used /excellent condition. Call 925-422-5831 or 408-914-1841

Electronic Equipment

UMAX Astra2200 flat bed scanner. All software, cables, & documentation. $30 o.b.o. 925-426-2320

Onkyo 12 inch 3-way Speakers (Fusion AV S-31) 110-watt. $50 for pair. 925-371-6252

Speakers (2), Sanyo 8 0hm, 26 In.H x 14 1/2 In.W x 11 In.D. $20.00 takes both 925-829-8939

Mitsubishi 42 inch Rear-Projection TV. $125 or best offer. 209-825-9737

Speakers: Boston Acoustics pair $25 (A150, 8 ohm, 90 dB/w/m, 16x9x32 in., walnut); Polk Monitor 10b Series pair $25 (100 w, 16x12x28 in., walnut) 925-245-9904

Giveaway

GIVEAWAY: Very large 55in TV in Beautiful oak cabinet with doors. TV does not work but would like to see the enclosure reused somehow. You haul. 209-823-0976

Tektronix RM585A Oscilloscope with dual channel 200 MHz plug-in. Large. Heavy. Only one channel working. Free for haulage. 925-462-6515

Select Comfort Twin Size Elite Air Bed with frame, pump and controls. Excellent condition, used as guest bed. 925-820-8158

Free oak dining table and cushioned chairs. You pick up! 209-483-8719

Packing material and mailing boxes from my e-bay purchases. I can deliver to the Lab if you like. 209-823-0976

Smooth river rock. Approx 2 yards. You haul. 925-371-0502

Household

White tubular metal sofabed frame. You add the futon. Make offer. 925-766-8233

DINING TABLE, 1970 era 62inX42in with 2 leafes, trestle legs, pecan finish. Very good condition $200.00 OBO 925-820-2921

Roll-top desk, $25.00. 925-455-5985

Piano, upright. Oak finish. $500.00 OBO. 925-606-0722

Table with round glass and 4 matching wicker highback chairs. Excellent condition. Please call for pictures. $250 or best offer. 925-735-3905

Refrigerator, Kitchen Aid, 20 cu. ft. over/under, almond $125.00 OBO 209-835-8962

For sale baby crib - like new Jenny Lind crib in white washed maple color, crib mattress in excellent condition, and pink crib bedding set. 510-396-8097

Color 21 inch TV w/remote and matching black shelved TV stand. All in excellent condition. Stand alone was $100. Both for $150. 925-648-0671

Bathroom fixtures; 2 sinks, 1 toilet and 1 whirlpooltub, Kohler porcelain light blue, excellent condition, best offer on one or all. 925-443-6149

Day Bed. White with brass accents. Includes mattress and a trundle bed. Great condition. $250.00. Call after 6pm 925-373-1450

Black Leather Couch & Loveseat $500, Coffee table $100, Small Dining table with 4 chairs $250. All items are 4 months old & Like New. 626-524-7157

White Kenmore 15.1 cu. ft. frost free chest freezer with 2 baskets. Excellent condition. $125 925-371-0369

Antique: 1914 Hoosier type cabinet. Solid Oak, porcelain top, sugar jar, flour bin, pie rack. 1000. OBO. Call for picture. 209-823-4609

Worm composting bin and worms. Wriggly Wranch bin from Alameda County. Will instruct on use. $10. You haul. 925-462-6607

Kids full size Captain Bed w/4 drawers & stoage space. Good condi.$30. 925-249-9186

Dual Reclining Love Seat, Light Blue $100. Queen Mattress and Boxspring, great condition, $50. 925-606-6599

Lost & Found

Found---blue umbrella, A-4 parking lot in a Lab bicycle basket week of Oct. 25. Identify by brand or handle style/color. Call x2-0198. 925-961-1658

A set of keys were found by the west portal entrance to B132. Contact 27941

Miscellaneous

Hot water solar heating panels (2), 80-gallon capacity: $250. 510-886-3322

Wheelchair-electric w/vehicle lift, $300, 925-443-1547

Lego blocks galore! Over $300 worth of Lego blocks - a huge bin of Legos for $50! 209-814-6866

TEARS FOR FEARS + Dirty Vegas Sunday Nov. 21 8:00 pm Warfield Theater S.F. 3 Tickets $25.00 + Ticketron charges, seats in balcony 925-292-0134

DOUBLE STROLLER. Baby Trend Sit-N-Stand LX IV Plus. Reconfigurable for any pair of children in the 0 to 5 age range. $75. 925-454-8827

Countertop dishwasher. Fits under countertop, 17 inch high. Stainless steel interior, holds up to 4 placesettings. Unopened, paid $150. $90. 925-648-0671

Sacramento Kings Tickets, Two pairs of prime Tickets in row BBB Center court. For sale $250 to $350 per seat. 209-652-5454

Beanie Baby collection, more than 250. Most 95 and retired. Over $8k book value. Make offer. Great for Christmas. 209-612-0231

Drafting table, adjustable top 30x40, with Vemco Vtrack machine $35.00. Roll around power hacksaw $40.00. Dolly heavy duty $25.00 925-447-6099

Outdoor Christmas wire white lighted decorations. Two adult reindeers, one baby reindeer and sled. Have photo of assembled set. $50.00 925-846-4864

Leather coats,womens size 12,burgundy,one full length & one waist length,at lab,$150 for both. 209-479-6375

Beautiful long navy evening gown.Sleeveless, fully beaded bodice,size 10.Purchased recently, worn once.Perfect for formal dinnner occasions - $75. 925-243-1398

Motorcycles

1972 - Honda trail70 exc shape orig owner lots of fun 1000.00 209-531-1330

2000 - Honda Superhawk VTR1000. Yellow/black, Yosh pipes, good tires, new clutch, cover, etc. 14,500 miles, good condition. $4500/OBO. Use home phone. 510-684-6938

2000 - HONDA 300EX ATV, Excellent condition, low-medium miles. Kelley Blue Book=$2,900. Asking $2,800. 209-833-6202

1982 - Yamaha MX 100, Great beginners bike, just in time for X-mas, 2 stroke with good low end torque, no need to mix gas has oil injection!$575 209-836-3481

1999 - Harley Davidson sportster. 1200cc conversion. Fat tank, custom exhaust, lowered. Very nice. $6,000 925-606-8763

2001 - Suzuki GSXR1000, very good condition, 15,545 miles, blue&white well maintained, blueprinted chasis, 2002 bodywork salvage title. All Stock $6200/OBO 925-456-0758

Music Instruments

Electronic drums. Roland brand, V drums. Full kit,TD10 module. Immaculate condition. $2300.00 Call for details. 925-373-6255

Pets & Supplies

10 mo. old Satin buck rabbit. Sire Grand Campion has awards in youth claases. $30. 925-447-6682

Springer Spaniel, Male, AKC, 11 months, Black & White. Very sweet & smart. $200 209-835-8667

Satin Bunnies, 6 mos. old. Sire Grand Champion. Shown and won awards in youth classes. $20. each. 925-447-6682

Dressage pony, Gelding, Age 14, 14.1+H, available for part lease, very steady and reliable, prefer serious junior rider with some riding experience 925-443-1714

Free: four kittens who need good homes. Two male, two female. Approx. 2 months old; weaned. Call for picture/info. 209-599-4754

Akita puppy - Female. Hobby Show Kennel Sire is Champ. Shots and worming done. Health guarantee. Companion price 750.00 209-835-9673

Holiday Puppies, Pugs, Fawn, AKC, available 11/21 or hold until 12/24, $850 925-829-1794

Rescued kittens looking for loving forever homes. Please consider adopting one or better yet, two! Vaccinated and spay/neutered. $75 adoption fee. 209-833-0607

Recreation Equipment

Weight lifting equipment - cage, 2 benches, 2 bars, 2 heavy dumbbell sets, many free weights 60#-5# $100 925-283-5995

Camper, Four-Wheel, 2001, Grandby with modifications for extended dry camping. $4900 925-447-5194

Childs Snowboard just in time for X-mas! Size 113 w/ bindings could work for a boy or a girl! $100 (209)968-2278 209-848-1138

1996 11.5 Skyline fully self contained camper. Exc. condition micro, air, inside/outside shower, elect. camper jacks. $7500 OBO209-833-7604

Ridesharing

Express your commute, call 2-RIDE for more information or visit http://www-r.llnl.gov/tsmp.

SALIDA - VAN OR CARPOOL 5 DAYS WORK HOURS 7:00-3:30 HOURS MAY BE FLEXABLE 209-543-9669, ext. 4-5069

Walnut Creek - Carpool as a rider/driver. PT, T, W, Th, flex. hours, 8:00-4:45 or 8:30-5:15, cross streets are Bancroft and Treat. 510-710-7502, ext. 3-8552

Patterson - Vanpool has seats available for M-F, 7:30-4:00 shift. Tax-savings & ride home programs available. Call for details 209-892-2118, ext. 2-9502

Martinez - Looking to add another rider/driver to a car pool leaving Martinez. Leaving town 6:45 and leaving the lab 4:30. Will consider Pleasant Hill riders. 925-228-3759, ext. 3-7857

Lafayette - LaMOrinda Vanpool (also WALNUT CREEK stop at Rudgear Rd): reclining seats, reading lights, 7:45-4:45, $105/mo (pretax reduction available) 925-943-6701, ext. 2-3005

Services

Boutique-Christmas & more. Nov. 18&19 1-7 pm, Nov. 20 10am-4pm at Ranchos Los Pimientos, 5255 Tesla Road, Livermore. Call 371-0824 or 925-449-6048

HOLIDAY BOUTIQUE-Hand Crafted Gifts! Sat., Nov. 13th - 9AM Till 5PM - 2337 Del Monte ST., Livermore - N.Vasco, left on Garaventa Ranch, then rt 925-292-5116

House clearning services Livermore and Tracy, Reasonable, good refs. 209-836-9082

CONCRETE-foundations, custom, stamped, colored, sealing & more. Over 20 years experience. 408-806-9816

CARPET-LAMINATE Pull up/dispose of old flooring, install your new carpet/laminate in time for the holidays. 925-516-9510

Professional carpenter with 15 years experience. Kitchen, bathroom, etc. repair and remodling. 925-249-9186

Shared Housing

Castro Valley- 1 bd inlaw appt. Full bath. Kitchen/living rm. 650 sq/ft. Private entry. Quiet. $800 /month. 510-276-1240

Livermore - 2 rooms for rent, $450 and $400. Non smoker, no pets, one mature adult per room. prefer LLNL employees, full privileges 925-447-6218

Livermore - furnished room for rent. Clean/quiet. No pets/no smoking. Deposit. Share utilities. $550.00/month. 925-449-1128

Livermore, CA - RM for rent full bath $550.00.No pets,Smoking. 925-294-8162

Trucks & Trailers

4X6FT utility trailer with lights. No plates. Road worthy I have pics $300 209-833-7149

1997 - 97 Toyota Tacoma. 4WD. stick. Power everything and CD. 120k miles. Excellent condition. $7500 OBO. 925-456-9227

1995 - Chevy 1500 ext cab, 2wd, short bed, camper shell, pwr windows/doors, AC, cruise, very gd cond, 97Kmiles, $7.5K obo 925-606-0755

2001 - Dodge Ram 2500 Ext. 4x4 Leather, AT 62K, FW extras. 925-634-7513

1977 - Black Chevy 4X4 Stepside 4spd. New Carb,Starter,Fuelpump. Runs good. Still needs work. $2,200 obo. Call After 5:00pm 209-823-5951

1998 4-Star, 3 horse slant load, front & rear tack w/ drop down windows and gold plating on the outside! Very

Due to space limitations, *Newsline* may withhold ads that have already run. They will still appear on the Web.

Transport workshop creates inroads to future research

Frank Graziani of LLNL's B Division, the Institute for Scientific Computing Research (ISCR), and UCLA's Institute for Pure and Applied Mathematics (IPAM) co-sponsored a five-day workshop on Computational Methods in Transport in September that may turn into a bi-annual event.

Attended by more than 100 physicists, climate scientists, space scientists, medical scientists and mathematicians, the workshop forged new links between the research communities, which in the past have tended to study similar radiative transport phenomena separately. Since scientific literature is largely divided up by application domain, rather than by technique, a workshop focusing on common techniques opened new lines of communication to see whether modeling techniques that are the "bread and butter" in one application domain — radiation penetrating a cloud cover — can be productively applied in another — radiation illuminating features in the brain. The workshop also allowed nuclear engineers and astrophysicists, who rarely attend the same meetings or read the same literature, to interact.

The composition of the workshop attendees was approximately 50 percent federal laboratories (Department of Energy, Department of Defense, NASA); 40 percent academic; and 10 percent industrial and international laboratories, including four scientists from Russia.

Graziani and Gordon Olson of Los Alamos National Laboratory organized the workshop after leading a white paper-writing effort that grew out of the SCaLeS Workshop (Scientific Case for Large-scale Simulation) run by the Office of Science in Washington D.C. in June 2003.

The ISCR, which has undertaken numerous collaborative research activities with IPAM in the past, asked IPAM to co-sponsor to help get the mathematics community involved.

Since the workshop, many seminar exchanges and additional technical follow-on activities have been reported. Graziani intends to run a follow-up topically comprehensive workshop in 2006 and organize interdisciplinary workshops with a narrower focus in radiation transport next year to prepare for the next community gathering.

IPAM researchers said the workshop was a successful pioneering project in which one of their organizational affiliates took the technical lead. The group prominently featured the workshop and its initial results at a mid-point review by their sponsoring agency, the National Science Foundation, in an October 2004 project that ranged from basic research in computer science, computational mathematics, or computational science to development and testing of laboratory software and systems.

TOP 500

Continued from page 1

been a tremendous effort, with the Department of Energy and National Nuclear Security Administration, IBM and Laboratory scientists working together," said Dona Crawford, associate director for Computation, noting that BlueGene/L is still only one quarter of the system that will be in place by spring 2005.

"Livermore, from its very founding, has understood the value of high performance computing and has invested in generation after generation of supercomputer. I believe today that simulation science is now a peer with theory and experiment," Crawford said. "We are excited to have this new computational capability because it will help us to better understand the complex physical phenomena necessary to ensure the safety and reliability of the nation's nuclear deterrent.

"We have to answer pressing questions on tight timescales, and that drives us to have bigger computers and improved simulations and visualization techniques," she said. "These capabilities in turn are applicable to other domains and therefore we're able to advance multiple national agendas in science, national security and industrial competitiveness."

Dimitri Kusnezov, director of NNSA's Advanced Simulation and Computing program, who accepted the Top500 award with Crawford and Tilak Agerwala of IBM, emphasized the importance of the new simulation capablities the machine offers. "It's not the ranking that's important to me but the science that it enables," Kusnezov said. "We have a very pressing schedule and we're excited about the possibility of doing large-scale material science physics and chemistry on this machine."

Top 10 supercomputers

Other supercomputers in the Top500's top 10 include NASA's Columbia, ranked second; Japan's Earth Simulator, third; IBM's "Mare Nostrum" at the Barcelona Supercomputer Center in Spain, fourth; Los Alamos ASCI Q, sixth; Virginia Tech's System X, seventh; IBM's BlueGene/L Livermore prototype, eighth; Naval Oceanographic Office's IBM eServer pSeries, ninth; and NCSA's Tungsten, 10th.

"I'm just so delighted and proud that BlueGene has been named to this coveted position of No. 1," said Agerwala, vice president for Systems at IBM's Watson Research Center in New York. "This is an important milestone, but only one milestone on the way to delivering a 360 teraflop machine next year."

BlueGene/L's innovative design, with power and floor space requirements a fraction of previous sytems, will benefit both science and industry, Agerwala said. "I believe, because of these characteristics, we're poised to make breakthroughs in science as well as in business."

During the Top500 press conference, reporters asked if greater number-crunching power than available in machines like BlueGene/L and NASA's Columbia system is really necessary.

Crawford said the scientific challenges of stockpile stewardship will need the development of more powerful machines. "Weapons scientists require a petaflop (1,000 teraflops), so we absolutely have to have multiple vendors trying to reach a petaflop of computing capability by the end of the decade," she said.

Walt Brooks, division chief of NASA's Advanced Computing Division, agreed that the scientific challenges NASA faces will require ever more powerful computing capabilities.

"The lack of computing is an impediment to the imagination of America's scientists and engineers. When we supply it, we see their imagination run free and we start to see unbelievable science coming out," Brooks said.

"We recognize the value of spending billions to build experimental facilities like the DOE supercollider and large telescopes like the Hubble. These large computer systems like Columbia, BlueGene and the Earth Simulator are the Hubble telescopes of the numerical simulation community. Numerical science is an emerging field and needs facilities, which require an investment by our nation as well. "

Lynn Kissel, LLNL deputy program leader for Advanced Simulation and Computing (ASC), discussed early work on BlueGene/L in a presentation at SC2004 Tuesday, noting it was another "in a long, proud history of supercomputer acquisitions dating to the Lab's founding."

BlueGene/L's unprecedented number crunching power represents an important step toward the capability to conduct predictive three-dimensional full system nuclear weapon performance simulations for the Stockpile Stewardship Program to ensure the safety, security and reliability of the nation's nuclear deterrent in the absence of underground testing.

Applications for BlueGene/L are still in the very early stages of development, Kissel said, describing preliminary calculations related to materials-aging, how materials behave under stress, such as heat and pressure, and turbulence studies of instabilities and fluid flow.

The machine also has also a FLASH code developed at the University of Chicago to study supernovae.

University of California campuses and labs have nine supercomputers in the top 25.

Fancy!!! $14,000 O.B.O. (209)968-2278 209-848-1138

1982 - Toyota SR5 long-bed truck with shell, original owner $1500 or BO smog ok. 925-846-3548

1990 - Ford Bronco II,4X4,E.B. edition,Very good condition,very dependable,fun recreational vehicle. $2500.00 o.b.o. 209-836-2990

1997 - Dodge Ram 1500 extended cab excellent cond 75K mi. Lift kit,35in tires,dual Rancho shocks, Rhinoliner, many extras plus all stock parts. $12,000. 925-606-6338

ATV Trailer, side load with ramps diamond plate tool box. Very nice shape. $1200.00 BO 209-239-2812

2002 - Chevrolet Red Silverado 1500 Extended Cab Short Bed 4x2, A/C, AM/FM/CD, 57,500 Miles, $17,890 OBO 209-521-7702

Vacation Rentals

Perfect location for skiers! Tahoe cabin for rent 2 blocks from Heavenly. Sleeps approx 8 adults. $375/wk, $175/wknd. 925-240-1615

MAUI Kihei oceanfront condo: ocean view, white sandy beach, pools, tennis, snorkeling. Pro golf nearby. Low LLNL rates! 925-846-1459

Maui - condo, RCI gold crown, large 1 bd, 2 ba, sleeps 4, avail. may 9 - 16 or trade for other times or more weeks. 925-447-0856

SOUTH LAKE TAHOE - 3 Bedroom 2 Bath Chalet, comfortably furnished, all amenities, 209-599-4644

Wanted

Experienced and responsible plumber to install new bathroom piping in Union City area 209-740-7287

Broken microwave - looking for glass tray, size 10 by 16 or smaller. 925-447-8415

Join a Ski Club - new friends, discounts, ski cabin, trips, ski or snowboard, recreational racing. 925-828-8265

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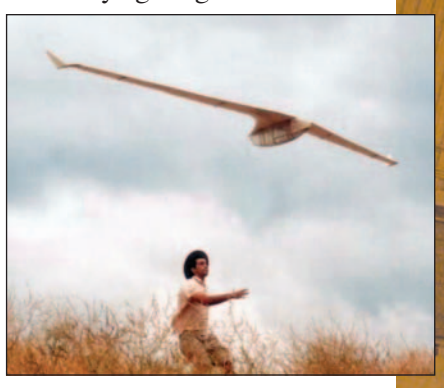
SAILPLANE

Continued from page 1

the Altostratus I. Using about $50 worth of foam, fiberglass and carbon fiber and Silva's engineering calculations, they built the Altostratus I flying wing with a five-meter wing span, one-fifth of the original 25-meter wing span that McMasters had described in the *Soaring* article.

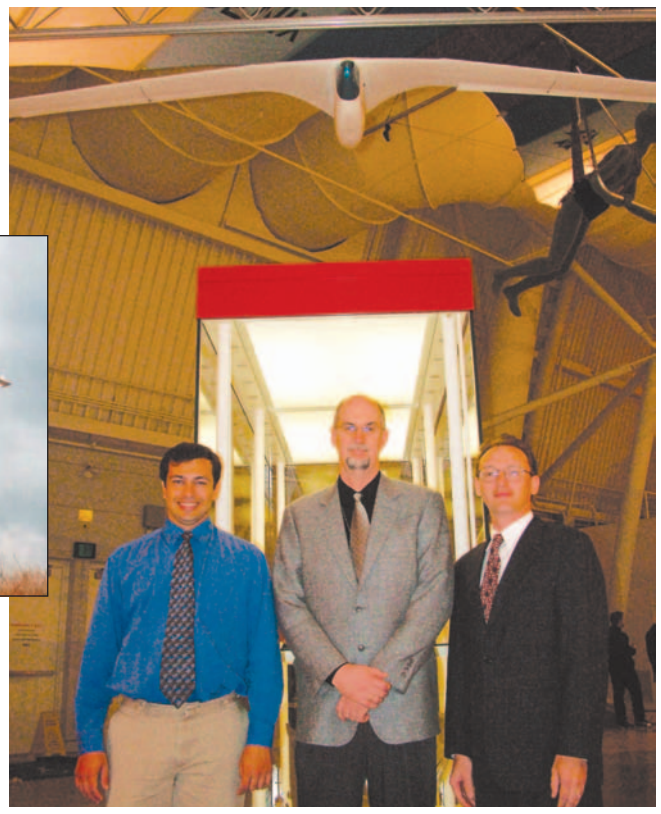


Chris Silva launches the one-fifth-scale model of the Altostratus I in the hills of Tehachapi, Calif.

Silva and his friend, Gary Fogel, flew the radio-controlled glider in the summer of 2001, the year Altostratus I was originally intended to soar, in Tehachapi, Calif. The first flight lasted 16 1/2 minutes.

"It was one of the most intense 16 minutes of my life," Silva said. "It's a very temperamental machine. It was fun to see this sailplane go full circle from McMasters' idea to flying a scale model of it."

"I was frankly amazed when I first heard that Chis and Gary had turned my old daydream into a 'reality,' and it's given me a concrete example to use in an extended preach I've been engaged in for several years about means to enhance engineering education and technical education in general," said McMasters, who also is an affiliate professor in the department of aeronautics and astronautics at the University of Washington. "Despite the fact that I hadn't met Chris until the model was installed in the National Air & Space Museum a couple of weeks ago, I consider him an extraordinarily promising young engineer, and think Livermore was very fortunate to have hired him."



From left: LLNL engineer Chris Silva, Russ Lee, curator of the National Air and Space Museum, and Gary Fogel, Altostratus model test pilot.

With the opening of the Smithsonian Institution's National Air and Space Museum's Steven F. Udvar-Hazy Center at Washington Dulles International Airport last year, the Altostratus I fit the bill for inclusion. The project caught the attention of a curator who thought the one-fifth-scale model would be the perfect addition to the new museum, which displays and preserves the Smithsonian's collection of historic aviation and space artifacts.

Silva said he was completely surprised that a project that took him 18 months to build in his spare time with an inexpensive amount of supplies would wind up at the Smithsonian. The Altostratus I now hangs among the home-built airplane and hang glider section of the museum.

"This just goes to show you that you don't need to build a 707 to get into flying," Silva said.

With 20 radio-controlled sailplanes in his garage, Silva said he became interested in sailplanes as opposed to airplanes because they require much more engineering to build.

"Gliders are a lot more challenging," he said. "You have to fly efficiently and if you don't, you find out right away" because the glider will crash, Silva said. He said radio-controlled airplanes usually have engines powerful enough to get them out of tricky flying situations.

Silva said he will build a second Altrostratus using some of the new refinements that McMasters has suggested.

"I think there is enough interest in the Altostratus to expect that it might someday become a real sailplane," he said.

CARTER

Continued from page 1

toms and Border Protection when they have to man the borders today, this afternoon, tonight, tomorrow?" Carter asked. "They don't get a Saturday off. They certainly don't get a month off."

As advocates and developers of new technologies, Carter said he and other DHS officials need to understand why other security agencies may not see how some technologies could revolutionize their business.

"The problem is they don't have time to think about the revolutionary ideas that might help them six months or six years from now," the DHS scientist explained.

Carter pointed out the vastly different landscapes between the Defense Department, which largely trains but only fights a small percentage of the time, with the Homeland Security Department, which is on the job for border protection and other functions all the time.

"Our opportunities to inject technology into ongoing operations — where we've really gone through an operational test and evaluation cycle — are very different than what the Defense Department has."

The DHS Science and Technology directorate develops advanced technologies to support the department's other three operational directorates and components, including Border and Transportation Security, Emergency Preparedness and Response, Information Analysis and Infrastructure Protection, the Secret Service and the U.S. Coast Guard, along with state and local responders.

A second challenge for DHS, according to Carter, is finding the right balance between funding research and development for evolutionary and revolutionary technologies.

This is particularly true for assisting an agency like the Secret Service, which in recent months has been preparing for the Democrat and Republican conventions and the inauguration.

"They want to know what the mature technologies are. What have you already done that I can use in a venue six months from now. We have a difficult challenge here," Carter said.

Another challenge cited by Carter during his talk is the need to detect and interdict nuclear and radiological threats.

DHS officials believe, he noted, that security against nuclear threats starts abroad by securing nuclear materials and that in the near and mid-term a layered defense is the only option.

Tom Edmunds (left), Michael Carter of the Department of Homeland Security's Science and Technology directorate and Karl Van Bibber, deputy director for the Laboratory Science and Technology Office, participated in the Nov. 4 UC Davis/LLNL homeland security workshop.

"Every dime we can spend to secure these materials at the source is a dime well spent."

Under a DHS initiative, more than $100 million isbeing spent to develop radiation detection technologies, both active and passive. Current efforts include an active neutron interrogation research program at LLNL, gamma ray interrogation and advanced concepts work.

"There is a lot that technology can do to bring this program to a level of effectiveness that is appropriate to the threat," Carter said.

The main problem in detecting nuclear and radiological materials, in Carter's view, is that there are "many, many more nuisance alarms than threat objects."

"The operational burden of inspecting a Safeway truck coming across the border that is full of kitty litter is the same as looking for a nuclear weapon in the back of the truck."

To understand the magnitude of protecting the nation's borders, Carter pointed out that on average 360,000 vehicles, 5,100 trucks and containers, 2,600 aircraft and 600 vessels enter the United States every day at 621 official border crossings.

One technology, Carter said, that is already making a difference for the nation is the BioWatch system, which monitors the air for bioterrorist attacks in more than 30 U.S. cities on a 24- hour per day, seven-day per week basis.

"This is an example of something we couldn't have done three or four years ago and we would not have been able to do it without the investment by others before the creation of the Department of Homeland Security," Carter said, crediting the Department of Energy, National Institutes of Health and Department of Defense.

One of the key components of BioWatch is the Biological Aerosol Sentry and Information System (BASIS), which was developed by LLNL and Los Alamos researchers and was deployed at the 2002 Salt Lake City Winter Olympics.

Last week's workshop also featured two panels — one on biosecurity and nuclear and radiation security, the other on crop and food security and cybersecurity.

Members of the first panel included LLNL biomedical scientist Allen Christian; Simon Labov, director of LLNL's Radiation Detection Center; Duane Lindner, deputy director of Chem/Bio Programs at Sandia California; and James MacLachlan, professor of pathology in the UC Davis School of Veterinary Medicine.

Members of the second panel were: Marvin Christensen of LLNL and the Computer Incident Advisory Capability; Tom Edmunds, chief scientist of the Systems and Decision Sciences Section at LLNL; Richard Bostock of UC Davis and director of the Western Plant Diagnostic Network; Jerry Gillespie of UC Davis and the Western Institute for Food Safety and Security and Karl Levitt, a UC Davis computer security professor.

An earlier workshop of UC Davis and LLNL researchers was staged in August 2003 and focused on the topics of materials science, biology and physics.

Harry Radousky of LLNL and Andre Lauchli of UC Davis chaired last week's homeland security workshop.

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